[Weight : 10%]

Exercise 001.1: Lagrange's Formula

YYYY-MM-DD – GD2P02 – Lab 001 – Student Name.zip

Project: Ex1

- Confirm Lagrange's formula is correct.
  - The Triple Product Expansion…
- Create a small C++ project…
- Calculate the RHS and the LHS for different test cases

Exercise 001.2: Plane vs Point Function

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Project: Ex2

- Plane: Defined by a point on the plane and a normal.
- Point: 3D Point in space.
- Create a C++ function to collide a point vs a plane.
- Return the result: ON_PLANE, INFRONT, or BEHIND.

Exercise 001.3: Line Segment vs Plane Function

YYYY-MM-DD – GD2P02 – Lab 001 – Student Name.zip

Project: Ex3

- Plane: Defined by a point on the plane and a normal.
- Line Segment: Two points, one for each end.
- Create a C++ function to collide a line segment vs a plane.
- Return the result: TRUE or FALSE.
  - TRUE = collision occurred, FALSE = no collision.

Exercise 001.4: Triangle vs Plane Function

YYYY-MM-DD – GD2P02 – Lab 001 – Student Name.zip

Project: Ex4

- Plane: Defined by a point on the plane and a normal.
- Triangle: Defined by three points.
- Create a C++ function to collide a triangle vs a plane.
- Return the result: TRUE or FALSE.

Exercise 001.5: Triangle Cutter

YYYY-MM-DD – GD2P02 – Lab 001 – Student Name.zip

Project: Ex5

- Implement an application that allows the user to:
  - Create a triangle:
    - By clicking three points to form the triangle.
    - T key resets the triangle…
  - Create a line:
    - By clicking two points to form the line segment.
    - L key resets the line…
  - If the line intersects the triangle…
    - Then render the resulting triangles
    - Use colour to make the triangles obvious…